

# Central<sup>TM</sup> Semiconductor Corp.

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Manufacturers of World Class Discrete Semiconductors

2N5189

NPN SILICON  
POWER TRANSISTOR

JEDEC TO-39 CASE

## DESCRIPTION

The CENTRAL SEMICONDUCTOR 2N5189 type is a NPN Silicon Epitaxial Planar Transistors designed for core driver and high current switching applications.

## MAXIMUM RATINGS ( $T_C = 25^\circ\text{C}$ )

	<u>SYMBOL</u>		<u>UNITS</u>
Collector-Base Voltage	$V_{CB0}$	60	V
Collector-Emitter Voltage	$V_{CEO}$	35	V
Emitter-Base Voltage	$V_{EBO}$	5.0	V
Power Dissipation	$P_D$	5.0	W
Operating and Storage			
Junction Temperature	$T_J, T_{stg}$	-65 to +200	$^\circ\text{C}$
Thermal Resistance	$\theta_{JC}$	35	$^\circ\text{C/W}$

## ELECTRICAL CHARACTERISTICS ( $T_C = 25^\circ\text{C}$ unless otherwise noted)

<u>SYMBOL</u>	<u>TEST CONDITIONS</u>	<u>MIN</u>	<u>MAX</u>	<u>UNITS</u>
$I_{CBO}$	$V_{CB} = 30\text{V}$		0.5	$\mu\text{A}$
$BV_{CBO}$	$I_C = 100\mu\text{A}$	60		V
$BV_{CEO}$	$I_C = 10\text{mA}$	35		V
$BV_{CEO}$	$I_E = 100\mu\text{A}$	5.0		V
$V_{CE(SAT)}$	$I_C = 1.0\text{A}, I_B = 100\text{mA}$		1.0	V
$V_{BE(SAT)}$	$I_C = 1.0\text{A}, I_B = 100\text{mA}$		1.5	V
$h_{FE}$	$V_{CE} = 1.0\text{V}, I_C = 100\text{mA}$	30		
$h_{FE}$	$V_{CE} = 1.0\text{V}, I_C = 500\text{mA}$	35		
$h_{FE}$	$V_{CE} = 1.0\text{V}, I_C = 1.0\text{A}$	15		
$f_T$	$V_{CE} = 10\text{V}, I_C = 50\text{mA}, f = 100\text{MHz}$	250		MHz
$t_{on}$	$V_{CC} = 10.7\text{V}, I_C = 1.0\text{A}, I_{B1} = 100\text{mA}$		40	ns
$t_{off}$	$V_{CC} = 10.7\text{V}, I_C = 1.0\text{A}, I_{B1} = I_{B2} = 100\text{mA}$		70	ns
$C_{ob}$	$V_{CB} = 10\text{V}, I_E = 0, f = 1.0\text{MHz}$		12	pF